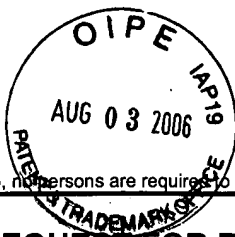


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PTO/SB/33 (07-05)

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PRE-APPEAL BRIEF REQUEST FOR REVIEW

Docket Number (Optional)

PA3166US

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on July 31, 2006

Signature

Typed or printed name
Stefanie M. Zilka

Application Number

10/614,347

Filed

July 8, 2003

First Named Inventor

Gregory A. Becker

Art Unit

2166

Examiner

Khanh B. Pham

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).

Note: No more than five (5) pages may be provided.

I am the

☐

applicant/inventor.

☐

assignee of record of the entire interest.

See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed.
(Form PTO/SB/96)

☒

attorney or agent of record.

Registration number 45,929

☐

attorney or agent acting under 37 CFR 1.34.

Registration number if acting under 37 CFR 1.34 _____

Signature

Stefanie M. Zilka

Typed or printed name

650-812-3419

Telephone number

July 31, 2006

Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.

☐

*Total of XX forms are submitted.

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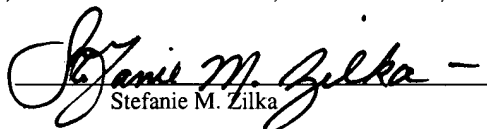
IN THE UNITED STATES
PATENT AND TRADEMARK OFFICE

APPLICANTS: Gregory A. Becker et al.
SERIAL NO.: 10/614,347
FILING DATE: July 8, 2003
TITLE: System and Method for Backing Up a Computer System
EXAMINER: Khanh B. Pham
ART UNIT: 2166
ATTY. DKT. NO: PA3166US

CERTIFICATE OF MAILING

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Stefanie M. Zilka

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Alexandria, VA 22313-1450

Pre-Appeal Brief Request for Review

Claims 1-12, 14-15, 20, and 26-32 have been rejected under 35 U.S.C. §102(e) as being anticipated by Goldstein et al. (US 6,665,815). In these rejections, the Examiner has failed to show that Goldstein et al. anticipates claims 1-12, 14-15, 20, and 26-32. Applicants will show that the Examiner's assertions regarding Goldstein et al. presents clear errors of fact and, therefore, this question is one that is appropriate for a decision by the Panel. Applicants hereby incorporate the previously submitted arguments filed in the Amendment mailed on May 16, 2006.

With regard to claim 1, the Examiner asserts that Goldstein teaches a method for maintaining a backup storage system for a data storage system comprising "receiving a plurality of data writes from an application program, the plurality of data writes occurring between a first time and a second time" at col. 5 lines 44-49 and Fig. 3; [and] "determining a backward increment between data on the data storage system the second time and data on the data storage

system at the first time based on the plurality of data writes from the application program to the data storage system” at Col. 6 lines 6-60 and Fig. 7.

In the subsequent office action mailed June 30, 2006, the Examiner further asserts that “the difference between the two snapshots is the same as a plurality of data writes applied to the first snapshot because First Snapshot + Data Writes = Second Snapshot.” The Examiner goes on to assert that “therefore... Second Snapshot – First Snapshot = Data Writes or... the difference between two snapshot = Plurality of Data Writes” and that “Goldstein therefore inherently anticipates the claimed limitation.” (*Office action*, 7)

However, Goldstein et al. fails to teach or suggest a plurality of data writes. A careful review of Goldstein et al. reveals that Goldstein et al. takes two snapshots of a disk volume at two different times. The two snapshots are virtual copies of the disk volume at those two different times, not a plurality of data writes from an application program occurring between a first time and a second time. Goldstein et al. compares the two snapshots to determine a difference list, based on the difference between the two snapshots. Assuming that “the backward increment” may be determined from the difference list the, Goldstein et al. determines a “backward increment” based on the difference between the two snapshots, not based on a plurality of data writes from an application program to the data storage system. Thus, neither the snapshots nor the difference between the snapshots are sufficient to enable the recovery of data to any point in time.

Goldstein et al. never “receives a plurality of data writes from an application program” as asserted by the Examiner. Rather, Goldstein et al. takes a snapshot of a disk volume at a base time and another snapshot of the disk volume at a first time. “[A] snapshot is a virtual copy of a disk volume.” (col. 3 lines 43-44 and FIG. 2.) The snapshots capture the state of the volume, not a plurality of data writes from an application program. That is, the snapshots are made only when the system is in a “consistent state.” (col. 3, lines 56-67 and FIG. 3) A snapshot of a disk is static capture of the entire contents of a volume at a single point in time, not a “plurality of data writes from an application program to the data storage system.”

Goldstein et al. bases a ‘snapshot difference list’ on the difference between the state of the disk at the base time and the state of the disk at the first time rather than

“based on the plurality of data writes from the application program to the data storage system,” as asserted by the Examiner. At Col. 4 lines 13-18 Goldstein et al. describes obtaining a ‘difference list’. “A first succedent snapshot difference list 121 (S_{01}) in data volume state snapshots is then obtained. A ‘snapshot difference list’ (e.g., $S_0 \rightarrow S_1$) is a list of identifiers of those data blocks in the first state snapshot 113 (S_1) that differ from the data blocks in the base state snapshot 111 (S_0).” (See also Col. 4 lines 28-36)

Assuming for the sake of argument that the “difference list” may be used to determine the “backward increment” of claim 1, Goldstein et al. determines such “backward increment” based on the difference between the snapshot of the disk in the base state and the snapshot of the disk in the first state rather than “based on the plurality of data writes from the application program to the data storage system,” as asserted by the Examiner. For at least these reasons, Applicant respectfully submits that Goldstein et al. does not anticipate claim 1.

With respect to claim 20, the Examiner asserts that Goldstein teaches a method for using a backup storage system for a data storage system comprising “receiving a plurality of data writes captured between an application and the data storage system, the plurality of data writes occurring between a first time and a second time” at Col. 5 lines 44-48 and Fig. 3; “identifying data blocks in the data storage system that were changed based on the plurality of data writes” at Col 5 lines 23-48; “applying the plurality of data writes to an image on the backup storage system” at Col. 6 lines 6-31; “determining a forward increment between data on the data storage system at the first time and data on the data storage system at the second time based on the plurality of data writes” at Col. 3 line 55 to Col. 4 line 50 and Figs. 4,6; [and] “determining a backward increment between data on the data storage system at the second time and data on the data storage system at the first time based on a plurality of data writes” at Col. 6 lines 6-31 and Figs. 7-11.” The two snapshots taught by Goldstein et al. are virtual copies of the disk volume at those two different times, not a plurality of data writes captured between an application and the data storage system, and occurring between a first time and a second time. Goldstein et al. compares the two snapshots to determine a difference list, based on the difference between the two snapshots.

Goldstein et al. identifies data blocks in the data storage system that changed based on the difference between the two snapshots, not based on the plurality of data writes. Assuming that “the forward increment” may be determined from the difference list the, Goldstein et al. determines a “forward increment” based on the difference between the two snapshots, not based on the plurality of data writes. Assuming that “the backward increment” may be determined from the difference list the, Goldstein et al. determines a “backward increment” based on the difference between the two snapshots, not based on the plurality of data writes, as discussed herein. For example, if a data block is written more than once between the time of the first snapshot and the time of the second snapshot, Goldstein et al. indicates the last data that was written to the data block, rather than “identifying data blocks in the data storage system that were changed based on the plurality of data writes” as taught by claim 20.

Goldstein et al. never “receives a plurality of data writes captured between an application program and the data storage system,” as asserted by the Examiner. Goldstein et al., instead, takes a snapshot of a disk volume at a base time and another snapshot of the disk volume at a first time, as discussed herein. “[A] snapshot is a virtual copy of a disk volume” (see col. 3 lines 43-44 and FIG. 2). The snapshots capture the state of the volume, not a plurality of data writes from an application program. A snapshot of a disk is static capture of the entire contents of a volume at a single point in time, not a “plurality of data writes from an application program to the data storage system”.

Goldstein et al. bases a ‘snapshot difference list’ on the difference between the state of the disk at the base time and the state of the disk at the second time not, as asserted by the Examiner, “based on the plurality of data writes from the application program to the data storage system”. At Col. 4 lines 13-18 Goldstein et al. describes obtaining a ‘difference list’. “A first succedent snapshot difference list 121 (S_{01}) in data volume state snapshots is then obtained. A ‘snapshot difference list’ (e.g., $S_0 \rightarrow S_1$) is a list of identifiers of those data blocks in the first state snapshot 113 (S_1) that differ from the data blocks in the base state snapshot 111 (S_0).” (See also Col. 4 lines 28-36)

Goldstein et al. identifies the data blocks in the data storage system that changed based on the difference list not, as asserted by the Examiner, “based on the plurality of

data writes". "The first succedent snapshot difference list thus includes identifiers of all the data blocks of the first state snapshot 113 differing from data blocks in the base snapshot 111." (Col. 4 lines 28-31)

Goldstein et al. applies the difference list to an image on the backup storage system not, as the Examiner asserts, "the plurality of data writes". "A first succedent backup 131 (B₀₁) is created by copying from the first state snapshot 113 (S₁) all the data blocks identified in the first succedent snapshot difference list 121. A copy of the snapshot difference list 121 is also included in the first succedent backup 131." (Col. 4 lines 36-40)

Assuming for the sake of argument that the "difference list" may be used to determine the "forward increment" of claim 20, Goldstein et al. determines such "forward increment" based on the difference between the snapshot of the disk in the base state and the snapshot of the disk in the first state not, as asserted by the Examiner, "based on the plurality of data writes".

Assuming for the sake of argument that the "difference list" may be used to determine the "backward increment" of claim 20, Goldstein et al. determines such "backward increment" based on the difference between the snapshot of the disk in the base state and the snapshot of the disk in the first state not, as asserted by the Examiner, "based on the plurality of data writes".

For at least these reasons, Applicant respectfully submits that Goldstein et al. does not anticipate claim 20.

In view of the factual errors presented above, Applicants request that the Panel reverse the rejections of claims 1-12, 14-15, 20, and 26-32 under 35 U.S.C. §102(e).

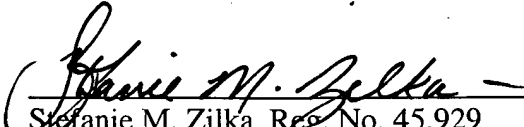
Respectfully submitted,

Gregory A. Becker et al.

Date:

7/31/06

By:


Stefanie M. Zilka, Reg. No. 45,929
Carr & Ferrell LLP
2200 Geng Road
Palo Alto, CA 94303
TEL: (650) 812-3465
FAX: (650) 812-3444